NPIC/TSG/RED-250-70
13 October 1970

MEMORANDUM FOR: Chief, Research and Engineering Division, TSG

SUBJECT : Planning a Guidance for the Development of a Five Year R&D Plan

1. Per your request, I am listing my impressions of [redacted] guidance paper. I have found it somewhat like you stated--a problem of reading between lines. In my first reading, I tended to be somewhat discouraged. However, in a second (more careful) reading, I found more with which I could find some encouragement in putting together meaningful future R&D programs. 25X1

2. First, I would tend to agree with [redacted] that we will have to reduce our expenditure in the Human Factors area. Not because I do not believe in its ultimate value, but because I feel that we are currently operating at a disproportionate high percentage with respect to the rest of our R&D programs. I feel that a law of "Diminishing Returns" — will function in this area and that we will have to become more and more selective and apply more and more manpower in order to reap the harvest of our efforts in this area. What we have been doing is Applied Research. This Applied Research, in turn, opens up vast areas requiring additional research. The follow-on research has a tendency to become more basic than its parent program. You can think of this as an upside down pyramid growing from the applied programs that we are now undertaking, while the actual benefit can be considered a right side up pyramid. If they are superimposed, there is a point where these structures coincide. We should strive to maintain our program at this practical level of effort. 25X1

25X1 3. I would disagree with [redacted] in the area of information technology, probably, because I see the problem in a different light. I do not divorce the Imagery Information Technology category readily from the Image Interpretation Instruments and Techniques category. Why? Because the simple solutions to viewing and displaying imagery have been well "rung out" at this point. The solutions that are left are much more complex and, in more cases than not, involve the use of a computer as an integral element in the system. The automatic stereo scanner is a prime example, and the Scan and Search PI Station development obviously lends itself to further modification and sophistication through the use of computers--either online or integral. The whole trend of current development in the area of imagery exploitation equipment today is

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pushing in this direction. Furthermore, our analysis of PSG and expediting the report production function would indicate that this is the area in which I can do the most to increase the Center's productivity. I do not
25X1 feel that a [ ] expenditure is too much. To the contrary, I feel that it is too little.

25X1 4. I would agree with [ ] that we should reduce our expenditures in the area of Image Manipulation. Not because I do not totally support the program; but I feel, as a percentage of our total budget, we are currently operating at a very high rate of expenditure in this area. This appears to be predicated more upon which programs can be implemented than which are most essential to the Center's function. I feel this is true because we are talking about degraded imagery; imagery which is the exception rather than the rule. Research and development in this area is essential and must continue, but I do not feel that the Center would suffer excessively if it were to progress at a somewhat slower rate.

25X1 5. I would take exception to [ ] comments with regards to
25X1 mensuration. Our programming of [ ] as a continuing level of effort is predicated more upon our inability to make accurate future projections in that area than upon actual fact. The actual expenditure rate will operate more like a Sine function. That is, we are currently going through a period of research and technical investigation. This will normally be followed by a wave of equipment development which will, in turn, result in more research and be followed by more equipment development etc.
25X1 While we will probably spend the [ ] over a three year period, it will realistically follow a pattern of [ ] etc. I think this 25X1
25X1 rational should be explained to [ ] If, for example, some of the more promising techniques now under consideration for semi-automating a comparator were to come to fruition, an extensive program in development would follow. The ultimate result would both speed up the mensuration process and reduce manpower requirements per [ ] overall guidance. 25X1

6. With these exceptions, in general, I would agree with the guidance
25X1 [ ] has given us.

[ ] 25X1
Deputy Chief,
Research & Engineering Division

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